CLAIMS

What is claimed is:

1. A binder composition for a non-woven fabric, the binder composition comprising:

a latex, the latex including a heterogeneous blend of dispersed polymer particles and a surfactant, where the particles include from about 55 to about 100% by weight of a gelled polymer, from about 1 to about 15% by weight polymeric units bearing an acid functionality, and where dried films of the latex exhibit a Tg of from about -50°C to about 60°C.

2. The binder composition of claim 1, where the polymer particles includes from about 75 to about 98% by weight of a gelled polymer.

3. The binder composition of claim 1, where the polymer particles include from about 3 to about 12% by weight polymeric units bearing an acid functionality.

4. The binder composition of claim 1, where dried films of the latex exhibit a Tg of from about -35°C to about 35°C.

5. The binder composition of claim 1, where the gelled polymer includes from about 15 to about 75% by weight units deriving from conjugated diene monomer.

6. The binder composition of claim 5, where the conjugated diene monomer is 1,3-butadiene.

7. The binder composition of claim 1, where the polymeric units bearing an acid functionality derived from acrylic acid, methacrylic acid, itaconic acid, or mixtures thereof.

8. The binder composition of claim 7, where the polymer particles include from about 0 to about 3% by weight units deriving from itaconic acid, from about 2 to about 7% by weight units deriving from acrylic acid, and from about 1 to about 6% by weight units deriving from methacrylic acid.

9. The binder composition of claim 7, where the polymer particles include from about 0 to about 8% by weight units deriving from acrylic acid, and from about 0 to about 8% by weight units deriving from methacrylic acid.

10. The binder composition of claim 7, where the polymer particles include from about 1 to about 7% by weight units deriving from acrylic acid, and from about 1 to about 7% by weight units deriving from methacrylic acid.

11. The binder composition of claim 7, where the polymer particles include from about 2 to about 6% by weight units deriving from acrylic acid, and from about 2 to about 6% by weight units deriving from methacrylic acid, and from about 0.5 to about 3% by weight units deriving from itaconic acid.

12. The binder composition of claim 7, where the polymer particles include from about 2.5 to about 5% by weight units deriving from acrylic acid, and from about 2.5 to about 5% by weight units deriving from methacrylic acid, and from about 1 to about 2% by weight units deriving from itaconic acid.

13. The binder composition of claim 1, where the latex is characterized by a pH of from about 4.5 to about 8.0.

14. The binder composition of claim 1, where the surfactant includes an alkali metal salt of an alkyl sulfosuccinate, a salt of alkyl sulfate, a salt of an organo disulfonate, or a mixture thereof.

15. The binder composition of claim 14, where the alkali metal salt of an alkyl sulfosuccinate includes alkali metal salts of mono and dialkyl sulfosuccinates, and where the alkyl substituents include from about 5 to about 12 carbon atoms.

16. The binder composition of claim 15, where the surfactant includes from about 50 to about 99% by weight sodium dihexyl sulfosuccinate compounds and from about 1 to about 50% by weight sodium dioctyl sulfosuccinate compounds.

17. The binder composition of claim 1, where the surfactant includes sodium dihexyl sulfosuccinate, sodium dioctyl sulfosuccinate, sodium octane sulfonate, an alkyl phenol ethoxylate, a fatty alcohol ethoxylate, an alkyl polyglucoside, an alkyl phosphate, sodium lauryl sulfate, sodium dodecyl diphenyloxide disulfonate, sodium laureth sulfate, Laureth-3, Laureth-4, Laureth-, Laureth-6, Laureth-7, sodium lauryl ether sulfate, sodium laureth-12 sulfate, sodium laureth-30 sulfate, or a mixture thereof.

18. The binder composition of claim 1, where the composition further includes a froth agent.

19. The binder composition of claim 18, where the froth agent includes disodium stearyl sulfosuccinamate.

20. The binder composition of claim 1, where the composition includes sodium laureth sulfate, and optionally an alkali metal salt of an alkyl sulfosuccinate, a salt of alkyl sulfate, or a salt of an organo disulfonate.

21. The binder composition of claim 1, where the composition includes sodium laureth sulfate and disodium stearyl sulfosuccinamate.

22. The binder composition of claim 1, where the composition includes sodium dodecyl diphenyloxide disulfonate and disodium stearyl sulfosuccinamate.

23. The binder composition of claim 1, where the composition includes an alkyl ether sulfate.

24. The binder composition of claim 23, where the composition further includes disodium stearyl sulfosuccinamate.

25. The binder composition of claim 1, where the latex composition includes from about 0.1 to about 10% by weight surfactant.

26. The binder composition of claim 1, where the polymer particles include from about 15 to about 75% by weight units deriving from styrene.

27. A non-woven fabric bound with a binder composition, the binder composition comprising:

a latex, the latex including a heterogeneous blend of dispersed polymer particles and a surfactant, where the particles include from about 55 to about 100% by weight of a gelled polymer, from about 1 to about 15% by weight polymeric units bearing an acid functionality, and where dried films of the latex exhibit a Tg of from about -50°C to about 60°C.

28. The non-woven fabric bound with a binder composition of claim 27, where the polymer particles include from about 75 to about 98% by weight of a gelled polymer.

29. The non-woven fabric bound with a binder composition of claim 27, where the polymer particles include from about 3 to about 12% by weight polymeric units bearing an acid functionality.

30. The non-woven fabric bound with a binder composition of claim 27, where dried films of the latex exhibit a Tg of from about -35°C to about 35°C.

31. A diaper sub-layer comprising a non-woven fabric bound with a binder composition, the binder composition comprising:

a latex, the latex including a heterogeneous blend of dispersed polymer particles and a surfactant, where the particles include from about 55 to about 100% by weight of a gelled polymer, from about 1 to about 15% by weight polymeric units bearing an acid functionality, and where dried films of the latex exhibit a Tg of from about -50°C to about 60°C.

32. The diaper sub-layer of claim 31, where the polymer particles includes from about 75 to about 98% by weight of a gelled polymer.

33. The diaper sub-layer of claim 31, where dried films of the latex exhibit a Tg of from about -35°C to about 35°C.